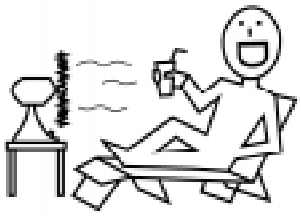

S'COOL BREEZE

Student's Cloud Observations On-Line

Volume 1, Issue 9 June 2000

S'COOL Observers Set New Record

S'COOL observations have set new records in recent months. We wish to thank all participating schools for their important contribution. The top 25 schools registering the greatest number of observations for the months of August 1999 – April 2000 are:

1. Penn State, PA, USA
2. Hawthorne E.S. Indianapolis, IN, USA
3. Burlington, Medford, NJ, USA
4. College Otfried, Wisembourg, France
5. Daniel Boone, Birdsboro, PA, USA
6. Columbia, Logansport, IN, USA
7. Selesiano, Tenerife, Spain
8. Martigny, Martigny, Switzerland
9. Bayard, Buenos Aires, Argentina
10. Kinnoull, Perth, Scotland, UK
11. Waiau, Pearl City, HI, USA
12. Harrah, Harrah, OK, USA
13. Waynesboro, Waynesboro, PA, USA
14. Universidad Europea de Madrid, Spain
15. Ecole st. Jean la Riviere, France
16. Fournier, Lynchburg, VA, USA

INSIDE THIS ISSUE

1	Top Observation Classes
1	On Photographing the Near Sky
2	Picture from Wisembourg
3	Teacher Corner
3	Investigation: All Kinds of Energy

On Photographing the Near Sky

The following is an excerpt from an article written by John Day, "The Cloud Man".

This essay is written in response to requests for tips on how to go about photographing clouds and cloudscapes. Clouds reside in the Near Sky, i.e. in the lowest 50,000 ft. of the atmosphere, in contrast to the stars which are seen in the distant Far Sky. Each photographer of the Near Sky faces the challenge of capturing fleeting images on film for future reference, either of a technical nature or from an artistic point of view. What follows is a set of simple guidelines that, if followed, will enable you to improve the quality of cloud images captured, regardless of the age or stage or sophistication of the camera instrument used.

continued on page2

Cumulus of fair weather" taken from Cloudman's web page:

http://www.cloudman.com/index.htm

continued on page2

17. Fowler M.S., Maynard, MA, USA
18. Primaire Henri Walton, Villiers-le-Bel, France
19. University of Virginia, VA, , USA
20. Ecole Jean Jaures, Le Versoud, France
21. St. Ignatius, St. Ignatius, MI, USA
22. Bryn Mawr, Baltimore, MD, USA
23. Statale, San Remo, Italy
24. Provincial no 704, Chubut, Argentina
25. Corte Madera, Portola Valley, CA, USA

Filming the Near Sky from page 1

1. At the top of the list, keep your camera Rock Solid when you press your shutter release. If possible, always use a tripod, or rest the camera against a wall, or post.
2. Use a haze or sky filter continuously.
3. Use a polarizing filter continuously. Polarized sky light maximizes at 90 degrees to the solar beam. Using the polarizing filter judiciously it is possible to increase the contrast between clouds, particularly of the cumulus family, and the background sky. This will enhance the cloud image. (Most of the point and shoot cameras now widely used will not accommodate screw on filters. However, all is not lost. It is not difficult to hold a filter in front of the lens, rotating it to obtain the desired effect, and taking care not to allow a stray finger to get in the line of sight.)
4. Use a neutral density filter as demanded by a particular situation. This will compensate for juxtaposed bright sky and dark foreground often encountered by Near Sky photographers.
5. Become aware of the subtleties of light. In general, avoid photographing in the middle of the day. There is more drama in the light of the low-sun sky of morning and afternoon.
6. And then there is composition. The artistic value of a cloudscape often is determined by the arrangement of the various elements that comprise the final image. Intrusive foreground material like bushes, tree branches should be eliminated as a first step in composition.
7. Most cameras used by amateurs and even professionals carry an automatic focus facility, activated by an infrared beam. If you have the capability of deciding on the appropriate f-stop you can decide on depth of sharp focus that will enhance particular subjects. This is of only minor concern when shooting cloud images.
8. A word of caution-when photographing a halo or corona around the sun, find some foreground object to block out the solar disc. NEVER look through your camera viewfinder directly at the sun. Overlooking this precaution could result in eye damage.
9. Always remember that clouds are ephemeral, always changing, disappearing into invisible vapor, reappearing in visible form. This is Nature's appearance-disappearance magic act. So, 'click' and catch the moment.
10. A word about film. There are several brands on the market of excellent quality. A range of film speeds is available. Perhaps ASA 200 is a good choice for most photographers of the Near Sky.
11. Hone your skills by practicing, and by thinking before you shoot. Exercise your "inner eye". Study the cloudscapes taken by master photographers, like Ansel Adams. Try to think as an Adams. Who knows, you may have the potential to become another master photographer of the Near Sky!

John Day has worked as a forecaster for Pan Am, taught physics and meteorology at several universities, has written a number of books on meteorology and worked collaboratively with the weather channel to develop a cloud chart . Check him out at: http://www.cloudman.com/index.htm.

Students of Dominique Hari, College Otfried in Wisembourg, France, make observations during Carolyn Green's visit.

S'COOL NOW HAS 480 SITES ENROLLED IN 37 COUNTRIES

TRY THIS

INVESTIGATION: ALL KINDS OF ENERGY

The Sun emits energy in different wavelengths, but that energy is not equally divided among the parts of the spectrum. 41 % of the Sun's energy is emitted in the visible range. 52% is emitted in the infrared range, and 7% in what is called the "near" UV – those wavelengths that are closer in length to visible light. X-rays and the shorter UV wavelengths are only 0.001% of the total energy emitted. At the other end of the spectrum, radio waves and microwaves are only about 0.0000000001 %. Scientists are particularly interested in UV emissions, for some frequencies of this wavelength are dangerous to humans, other animals, and plant life. Variations in UV emissions can also cause changes in the atmosphere. If there is more UV, chemical reactions speed up, increasing the heat in the atmosphere. If the Sun's output is changing in any way, it is important for us to know avout it. To get a picture of the Sun's output by wavelength, try this

Materials Needed:

1 piece of rectangular tagboard (heavy paper), 1 m long

pencil meter stick

colored pencils or markers

Using the meter stick, draw a vertical line across the tagboard at every 1-cm mark. You should have 100 boxes when finished. Think of each box as a percent [0.01(1/100th)]. Designate the left of the tagboard as the radio wave end of the spectrum. Energy emissions in this part of the spectrum. Energy emissions in this part of the spectrum are almost too small to mark, so draw a thin brown line at the far left of the tagboard to represent the radio waves and microwaves emitted by the sun. Counting from the left, color 52 blocks red to represent the infrared emissions. (Remember that these emissions do not have "color"; they are invisible to the naked eye. These colors symbolize the wavelength differences.) Calculate the number of blocks that will represent visible light. Color these yellow. Figure the number left for the near UV, and color these pink. Because this leaves almost no space for remaining shorter wavelengths of UV and X-ray, draw only a thin purple line across the far right end of the tagboard to represent these wavelengths.

Questions:

1. How many blocks will represent visible light ?
2. How many will represent the near UV?
3. What wavelength range enables us to see?
4. What wavelength ranges provide most of Earth's heat?
5. What wavelengths are beneficial to human, animal and plant life?

(Taken from NASA's "Earth's Mysterious Atmosphere")

News Bulletin

Teachers, please let us know if your email or postal address changes over the summer.

S'COOL was presented at a conference in Spain by Agueda Benito. Thank you Agueda for spreading the word about S'COOL in Spain.

A group of educators are translating S'COOL materials into the Thai language.

Record number of observations were made in February and March with a total of 369 and 443 respectively . Thanks to all those classes which contributed.

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Upcoming events

S'COOL Presentation at the International Geoscience and Remote Sensing Society in Honolulu, HI, July, 2000

2001 Summer S'COOL Workshop

Aqua Launch, 2000

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